

REMARKS

Examiner is thanked for carefully reviewing the present application. The present amendment is in response to the Office Action mailed on August 16, 2006 regarding claims 1-10 and 17-22.

Favorable reconsideration is requested in view of the following remarks.

Claim Rejections under 35 U.S.C. §103(a)I

Claims 1-10 and 19-21 are rejected under 35 U.S.C.103(a) as being unpatentable over Ohnuma et al. (US 6072193) in view of Qiao et al. (US 5,066,519). The rejections are respectfully traversed.

As explicitly recited in claims 1 and 19, the claimed invention featured in forming an oxide film specifically on a substantially entire inner wall of the processing chamber prior to doping the source and drain electrodes with P, so as to prevent the chemical species containing P from being stuck to the inner wall thereof.

In rejecting the claimed invention, Examiner has held that Qiao et al. teaches forming an oxide on substantially entire inner wall of a CVD process chamber. However, as described in the Abstract, Qiao actually suggests: (1) depositing a gettering layer of phosphorous containing glass (PSG) on interior surfaces of the process chamber prior to wafer processing, thereby gettering mobile alkali ions and reducing outdiffusion of alkali ions and other impurities; (2) depositing undoped silicate glass, silicon nitride, silicon oxynitride or the like on the gettering layer to trap impurities and to prevent phosphorous contamination; and (3) depositing silicon nitride or silicon oxynitride on interior surfaces of the process chamber without a gettering layer, to thereby substantially prevent outdiffusion of underlying moisture and impurities. Also, throughout FIG. 1 to FIG. 4 and the entire specification, Qiao has taught that the wafer processing is a wafer deposition step. Apparently, Qiao at most could teach forming a silicon oxynitride layer on the inner wall of the processing chamber prior to a wafer depositing step, thereby preventing outdiffusion of underlying moisture and impurities.

On the other hand, Ohnuma merely teaches forming gate oxide on the substrate, which includes the steps of depositing and doping with P, and Ohnuma is silent with respect to forming the oxide film on the inner wall of

the CVD processing chamber. Thus, the combined teachings of Ohnuma and Qiao could possibly lead to forming a silicon oxynitride layer on the inner wall of the processing chamber prior to depositing the silicon oxide film 102, the amorphous silicon film 103 or the gate insulation film, but not prior to the step of doping with P. Moreover, silicon oxynitride alone is merely one of the materials suggested by Qiao for preventing outdiffusion of underlying moisture and impurities, and for preventing phosphorous contamination, silicon oxynitride is formed on the gettering layer (phosphorous containing glass), wherein the phosphorous contamination is caused by the PSG, and the silicon oxynitride is used to cover the PSG from being released. Apparently, none of Qiao's purposes is related to the purpose of the claimed invention for preventing the chemical species containing P from being stuck to the inner wall of the CVD processing chamber, Qiao does not have the motivation to select the oxide film along as taught in the claimed invention.

Therefore, Ohnuma et al. in view of Qiao et al. certainly fail to teach or suggest forming the oxide film specifically on the substantially entire inner wall of the CVD processing chamber prior to doping the source and drain electrodes with P; and controlling the thickness of the oxide film to at least 50nm. More particularly, for Ohnuma et al. in view of Qiao et al., the claimed invention can achieve an unexpected result of preventing the chemical species containing P from being stuck to the inner wall of the CVD processing.

Therefore, claims 1 and 19 of the claimed invention are not obvious to one of ordinary skill in the art at the time the invention was made.

In rejecting claims 2 and 18, Examiner has held that Ohnuma teaches the oxide film containing SiO_x . It is very unclear how the Examiner is reaching this conclusion. Since Examiner also indicates in the current Office Action that Ohnuma fails to disclose forming an oxide film on an inner wall of a CVD processing chamber, how can Ohnuma teach the oxide film containing SiO_x while not teaching the oxide film formed on the inner wall of the CVD process chamber? Further, it is noted that what Qiao discloses is silicon oxynitride but not SiO_x . Therefore, claims 2 and 18 of the claimed invention are not obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claim 17, the claimed invention discloses a specific feature of heating the substantially entire inner wall of the CVD processing chamber

to facilitate forming the oxide film thereon. However, Examiner does not indicated in the current Office Action that either Ohnuma or Qiao has ever taught the feature of heating the substantially entire inner wall of the CVD processing chamber, and in fact, Ohnuma and Qiao both fails to teach or suggest this heating feature. Therefore, claim 17 of the claimed invention is not obvious to one of ordinary skill in the art at the time the invention was made.

With regard to claims 2-10 and 17-18, since claim 1 is allowable, dependent claims 2-10 and 17-18 each of which depends from independent claim 1 are likewise believed to be allowable.

With regard to claims 20-21, since claim 19 is allowable, dependent claims 20-21 each of which depends from independent claim 1 are likewise believed to be allowable.

Accordingly, Applicants respectfully requests that the section 103(a) rejections be withdrawn.

Claim Rejections under 35 U.S.C. §103(a)II

Claim 22 is rejected under 35 U.S.C.103(a) as being unpatentable over Ohnuma et al. in view of Qiao et al. and further in view of Deane et al. (US 6,180,438). This rejection is respectfully traversed.

Since claim 1 is allowable, dependent claim 22 which depends from independent claim 1 is likewise believed to be allowable. Accordingly, Applicants respectfully requests that the section 103(a) rejections be withdrawn.

CONCLUSION

In light of the above remarks, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If there are any remaining issues to be resolved, Applicant requests that Examiner contact the undersigned attorney for a telephone interview.

No fee is believed due with this Response, however, should a fee be required please charge Deposit Account 50-3720. Should any extensions of

time be required, please consider this a petition thereof and charge Deposit Account 50-3720 the required fee.

Respectfully submitted,

Dated: October 15, 2006

A handwritten signature in black ink, appearing to read 'Ido Tuchman', written over a horizontal line.

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